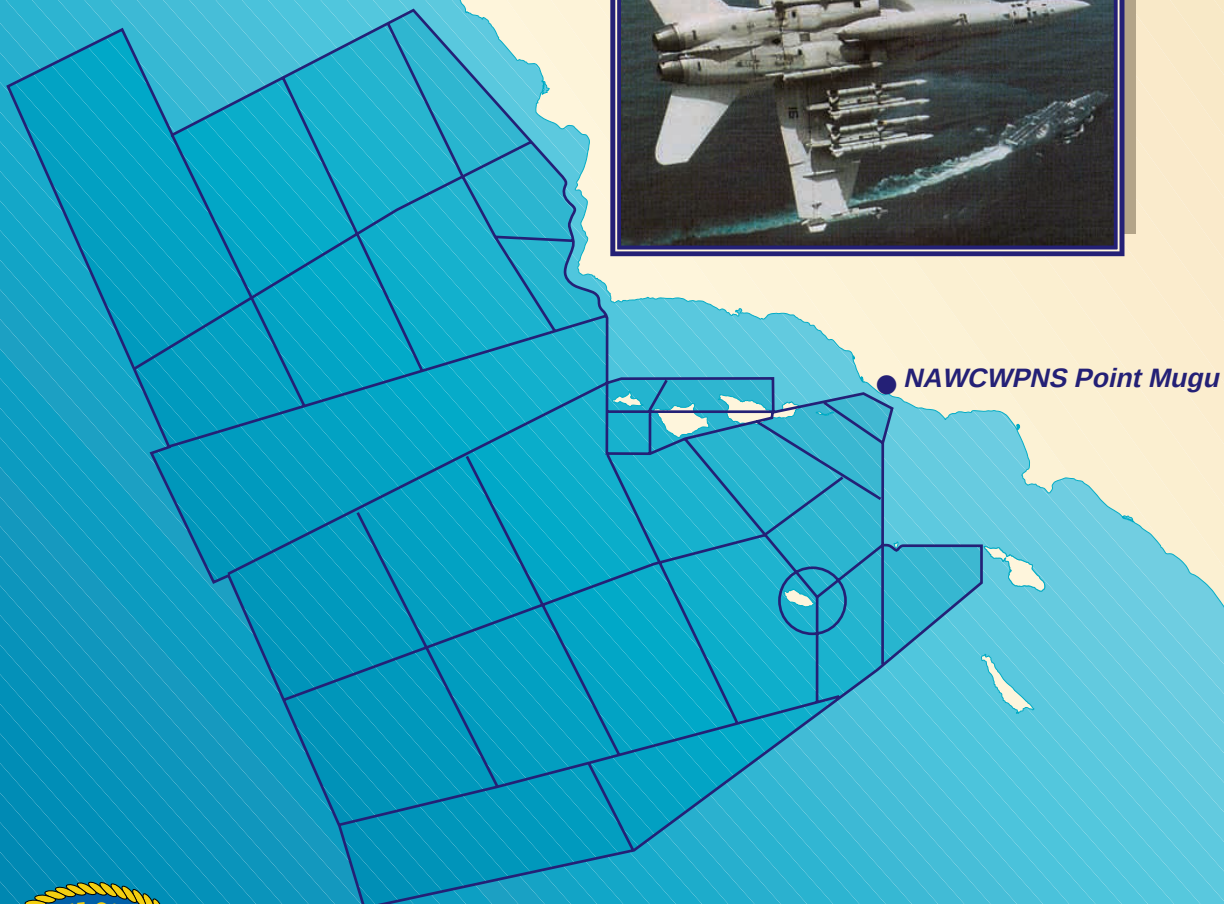
Department of the Navy

Naval Air Warfare Center
Weapons Division

DRAFT

Environmental Impact Statement/Overseas Environmental Impact Statement



EXECUTIVE SUMMARY

Point Mugu Sea Range

July 2000

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EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This Environmental Impact Statement (EIS)/Overseas Environmental Impact Statement (OEIS) analyzes potential environmental impacts that may result from actions proposed by the Naval Air Warfare Center Weapons Division (NAWCWPNS) Point Mugu. In addition to conducting current test and training operations at the NAWCWPNS Point Mugu Sea Range, NAWCWPNS Point Mugu proposes to accommodate Theater Missile Defense (TMD) testing and training, accommodate an increase in current levels of training exercises, and modernize facilities to enhance the existing testing and training capabilities at NAWCWPNS Point Mugu. This EIS/OEIS has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code [U.S.C.] § 4321 et seq.); the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (Title 40 Code of Federal Regulations [C.F.R.] Parts 1500-1508); Department of the Navy Procedures for Implementing NEPA (32 C.F.R. 775); and Executive Order 12114 (EO 12114), *Environmental Effects Abroad of Major Federal Actions*. The NEPA process ensures that environmental impacts of proposed major federal actions are considered in the decision making process. EO 12114 requires environmental consideration (i.e., preparation of an OEIS) for actions that may significantly affect the environment outside U.S. Territorial Waters. This EIS/OEIS satisfies the requirements of both NEPA and EO 12114. The Navy is the lead agency for the decision regarding which of the proposed TMD, training, and facility modernization alternatives at NAWCWPNS Point Mugu will be implemented. The Deputy Assistant Secretary of the Navy for Environment and Safety (DASN [E&S]) will be the decision-maker.

NAWCWPNS Point Mugu is located in Ventura County along the Pacific Coast of southern California and includes a 36,000 square mile Sea Range (Figure ES-1). The NAWCWPNS Point Mugu Sea Range, operated by the Department of the Navy for more than 50 years, provides a safe, highly instrumented volume of air and sea space in which to conduct controlled tests and operational training. The Point Mugu Sea Range is used by U.S. and allied military services to test and evaluate sea, land, and air weapon systems; to provide realistic training opportunities; and to maintain operational readiness of these forces. This test and evaluation (T&E) process is critical to the successful assessment, safe operation, and improvement of the capabilities of current and future weapon systems. While operations are conducted throughout the Sea Range, range areas are used throughout the EIS/OEIS to provide the reader with a geographic reference. The geographic scope of this EIS/OEIS includes the Sea Range, Naval Air Station (NAS) Point Mugu[1], Laguna Peak, Navy-owned San Nicolas Island, San Miguel Island, and approximately 10 acres (4.1 hectares) of leased land on Santa Cruz Island (see Figure ES-1).

ES.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

NAWCWPNS Point Mugu has a need to meet the established mission to conduct state-of-the-art weapons system testing and evaluation by providing a safe, operationally realistic, and thoroughly instrumented Sea Range testing environment and to maintain the level of operational readiness of our military services by providing a realistic training environment. The evolution of international threats and operational technologies has increased the number and type of military operations that require large water ranges for testing and training activities. Consequently, the role of NAWCWPNS Point Mugu as a test and training center has become even more critical. To meet the testing and training need, the purpose of the proposed action is: 1) to accommodate TMD testing and training at NAWCWPNS Point Mugu; 2) to accommodate an increase in current levels of training exercises at NAWCWPNS Point Mugu; and 3) to

[1] Naval Air Station (NAS) Point Mugu was previously called Naval Air Weapons Station (NAWS) Point Mugu. This December 1998 change reflects the transfer of the base property to the U.S. Pacific Fleet.

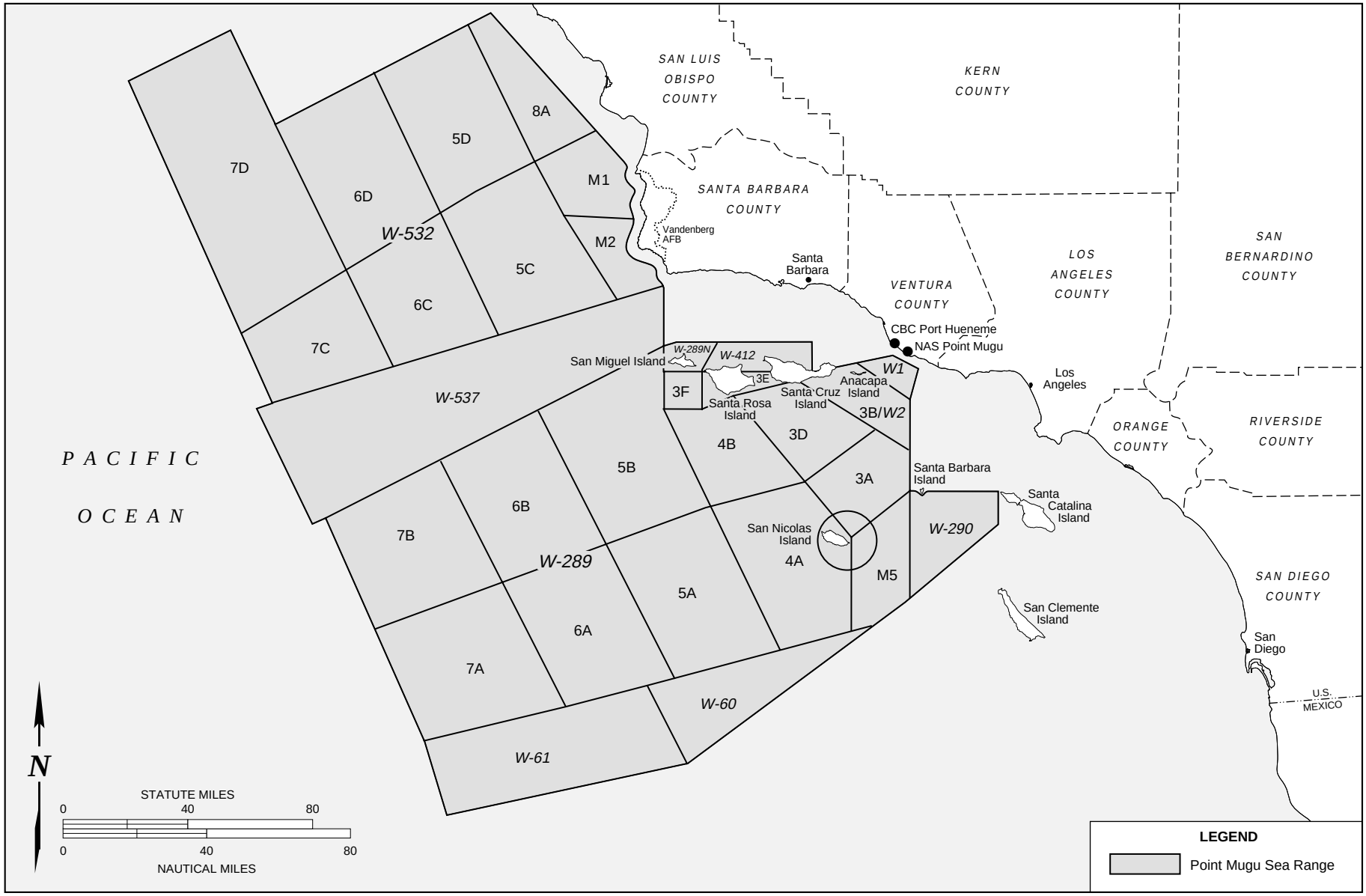

Figure ES-1
Point Mugu Sea Range

modernize facilities to enhance the existing testing and training capabilities at NAWCWPNS Point Mugu.

ES.3 SCOPING PROCESS

In accordance with NEPA, the Navy initiated a public and agency scoping process to assist in the identification of relevant environmental issues to be analyzed in this EIS/OEIS. The official Notice of Intent (NOI) to prepare the EIS was published in the Federal Register on 25 July 1997. The public and other interested parties were invited and encouraged to participate in the scoping process through the publication of newspaper advertisements, news releases, and notices placed in local groups' newsletters. Federal, state, and local agencies were also requested to provide input on relevant issues and identify specific agency concerns. A separate package was mailed to 14 agencies describing the proposed action and inviting agencies to meet individually with the Navy to receive more information and provide input to the scoping process. Subsequent to the distribution of the agency scoping package, the Navy met with representatives from the California Coastal Commission, the Channel Islands National Marine Sanctuary, the Channel Islands National Park, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, and the Ventura County Economic Development Association.

Five public scoping meetings were held between 21 and 27 August 1997 to inform the public of the Navy's proposed action and intent to prepare the EIS, and to solicit public comment. Agencies and the public were encouraged to contribute verbal or written comments at the scoping meetings or to provide written comments throughout the 50-day scoping period. A total of 104 people attended the five meetings. In addition to verbal comments, 40 written comments were received from various agencies, environmental groups, and citizens during the scoping period. Environmental issues identified during the scoping process are addressed within this EIS/OEIS.

ES.4 PROPOSED ACTION

The NAWCWPNS Point Mugu Sea Range currently supports five general categories of tests to evaluate sea, land, and air weapons systems: 1) air-to-air tests, 2) air-to-surface tests, 3) surface-to-air tests, 4) surface-to-surface tests, and 5) subsurface-to-surface tests. The Sea Range also supports three general categories of training including: 1) Fleet training exercises, 2) small-scale amphibious warfare training, and 3) special warfare training. (Current test and training activities are described in more detail in Chapter 3 and evaluated under the No Action Alternative in Chapter 4.) In addition to the current test and training operations conducted on the Sea Range, NAWCWPNS Point Mugu proposes to accommodate TMD test and training activities and an increase in the current level of both Fleet training exercises and special warfare training. Further, NAWCWPNS Point Mugu proposes to modernize facilities at NAS Point Mugu and San Nicolas Island to increase the Sea Range's capability to support existing and future operations. The specific testing, training, and facility modernization proposals evaluated in the EIS/OEIS are based on NAWCWPNS Point Mugu's current knowledge of priorities for future testing and training, and the needs and desires of NAWCWPNS Point Mugu to attract more testing and training activity to the Sea Range. The TMD, training, and facility modernization elements that comprise the proposed action are described below.

ES.4.1 Theater Missile Defense Element

TMD is intended to protect U.S. forces and allies against the threat of both short- and long-range missiles. NAWCWPNS Point Mugu proposes that the Point Mugu Sea Range accommodate four distinct types of TMD testing and training activities: 1) boost phase intercept (up to three events per year);

2) upper tier (up to three events per year); 3) lower tier (up to three events per year); and 4) nearshore intercept at San Nicolas Island (up to eight events per year).

ES.4.2 Training Element

The Sea Range currently supports two Fleet training exercises per year, four small-scale amphibious training exercises per year, and two special warfare training exercises per year. In addition to this current level of training, NAWCWPNS Point Mugu proposes to accommodate one additional Fleet training exercise per year and two additional special warfare exercises per year (small-scale amphibious training would remain at current levels).

ES.4.3 Facility Modernization Element

Facility modernization is proposed for both NAS Point Mugu and San Nicolas Island.

ES.4.3.1 NAS Point Mugu

As part of the proposed facility modernizations, NAWCWPNS Point Mugu proposes to use two previously used launch pads to serve as new missile launch locations at NAS Point Mugu. Currently, approximately six missiles per year are launched from a truck directly in front of the Building 55 Launch Complex. Four previously used launch pads are located along the beach of NAS Point Mugu. Under the proposed action, the Bravo pad (or pad B) and the Charlie pad (or pad C) would be used for missile launches. Missiles could either be truck-launched (the truck has a self-contained launch system and would be driven to the B or C pad) or launched directly from a mobile launch system located on the B or C pad. No construction would be required since missiles could be launched off the existing pads. Use of these locations would not affect the number or types of missiles launched from NAS Point Mugu and safety and clearance procedures performed prior to missile launches would be identical to current methods.

Some of the beach launches may include the use of solid propellant boosters. Solid propellant boosters provide the initial thrust necessary until the launched vehicle can propel itself independently. The booster falls off soon after launch and would typically land in the ocean 0.25 to 0.50 mile (0.40 to 0.80 km) offshore. The solid propellant contained in the boosters burns out during the launch operation and would be completely expended prior to the booster entering the ocean.

ES.4.3.2 San Nicolas Island

The proposed San Nicolas Island modernizations include construction of additional facilities and the addition of two new target launch systems. The proposed modernizations would not require additional staff on the island. Table ES-1 summarizes the modernization proposals. Where applicable, estimated footprint areas of new construction are also shown in the table.

ES.4.4 Testing and Training Activity Under the Proposed Action

Activity levels can be subdivided into categories which include aircraft sorties; ships and boats afloat within or near the Sea Range; missile firings; and target launches. Table ES-2 presents the baseline operations tempo plus the proposed new activities. Potential environmental impacts of the proposed TMD, training, and facility modernization elements are evaluated against this baseline.

Table ES-1. Proposed New Construction for San Nicolas Island Modernization Proposals

#[1]	Modernization	Total Area of Disturbance
1	Add vertical missile launcher to existing launch pad[2]	None (build on existing pad)
2	Construct new 50K launcher for target missiles[3]	1,200 SF (111 m^2) concrete pad
3	Add new Range Support Building	12,000 SF (1,115 m^2) construction area
4	Develop five new multiple-purpose instrumentation sites	15,000 SF (1,394 m^2) construction area (each)

SF = square feet; m^2 = square meters
[1] Numbers correspond to those shown on Figure 2-3b of the EIS/OEIS.
[2] Under the proposed action, the vertical launch system would be used approximately three times per year.
[3] Under the proposed action, the 50K Launcher would be used approximately three times per year.
Source: NAWCWPNS Point Mugu 1996l.

Table ES-2. Baseline Plus Proposed Sea Range Activities

Category	Aircraft Sorties	Ships and Boats[1]	Missiles Fired/ Ordnance Deployed[2]	Targets Launched[2]
Baseline Operations	3,934	799	351	300
Proposed Action				
Theater Missile Defense	89	111	20	17
Additional Fleet Exercise	57	18	34	33
Additional Special Warfare	4	32	0	0
Total Proposed Action	**150**	**161**	**54**	**50**
Total	**4,084**	**960**	**405**	**350**

[1] Includes range support boats.
[2] The number of *Missiles Fired/Ordnance Deployed* and *Targets Launched* are not equal because their ratio of use varies by event.

ES.5 ALTERNATIVES

ES.5.1 Alternatives Development Process

To help identify reasonable alternatives to the proposed action for analysis within the EIS/OEIS, the Navy eliminated testing, training, and facility modernization proposals that would be inconsistent with the Sea Range mission and associated facilities, instrumentation, and infrastructure that support this mission. Selection criteria were developed to help identify potential alternatives and eliminate unreasonable alternatives from further consideration. Selection criteria include: 1) reasonable alternatives must fulfill the need for, and purpose of, the proposed action; 2) reasonable alternatives must be consistent with the strategic vision for NAWCWPNS Point Mugu; and 3) supporting facilities, instrumentation, and/or infrastructure must be complementary to existing Sea Range capabilities. Alternatives that do not meet one or more of these criteria were not carried forward for analysis within the EIS/OEIS.

Several alternative test, training, and facility modernization components were initially screened and evaluated to determine their ability to meet the selection criteria but were eliminated from consideration due to their inconsistency with both the mission and strategic vision for the Point Mugu Sea Range.

ES.5.2 Alternatives Addressed within the EIS/OEIS

Three alternatives are analyzed in the EIS/OEIS. These include the No Action Alternative, the Minimum Components Alternative, and the Preferred Alternative.

ES.5.2.1 No Action Alternative - Current Operations

Under the No Action Alternative, current test and training operations would continue and the Sea Range would not accommodate TMD testing and training. The ongoing five categories of tests (i.e., air-to-air tests, air-to-surface tests, surface-to-air tests, surface-to-surface tests, and subsurface-to-surface tests) would continue to be conducted on the Sea Range. In addition, the three types of training activities (i.e., Fleet training exercises, small-scale amphibious warfare training, and special warfare training) would continue at current levels, and proposed facility modernizations at NAS Point Mugu and on San Nicolas Island would not be implemented. Although selection of the No Action Alternative would not allow the Sea Range to accommodate TMD events or increase the levels of current training activities, ongoing test and training operations at the Point Mugu Sea Range would not be affected.

ES.5.2.2 Minimum Components Alternative

If the Minimum Components Alternative were selected, only one component of each proposed action element (i.e., TMD, training, and facility modernization) would be implemented. Under this alternative, in addition to current testing and training activities, the Sea Range would be able to accommodate up to eight nearshore intercept events and one additional Fleet training exercise per year. The only facility modernization component which would be implemented is the construction of five multiple-purpose instrumentation sites on San Nicolas Island. Although this alternative meets the purpose and need for the proposed action, the capability of the Sea Range to support existing and future operations would not be fulfilled to the extent it would under the Preferred Alternative.

ES.5.2.3 Preferred Alternative

In addition to the five categories of tests currently conducted at the Sea Range, under the Preferred Alternative the Sea Range would be able to accommodate TMD testing and training activities. In addition, the Sea Range would be able to accommodate an increase in the level of current Fleet training and special warfare training activities. Facility modernization components at both NAS Point Mugu and San Nicolas Island would be implemented to enhance the capability of the Sea Range to support existing and future operations. A comparison of the three alternatives analyzed in the EIS/OEIS is provided in Table ES-3.

ES.6 ENVIRONMENTAL ANALYSIS

ES.6.1 Overview

The analysis evaluates potential environmental consequences associated with the proposal to accommodate TMD testing and training activities, accommodate an increase in the current levels of training, and modernize facilities at the NAWCWPNS Point Mugu Sea Range. Potential environmental consequences of the proposed action have been analyzed for the following resources: geology and soils; air quality; noise; water quality; marine biology; fish and sea turtles; marine mammals; terrestrial biology; cultural resources; land use; traffic; socioeconomics; hazardous materials, hazardous wastes, and non-hazardous wastes; and public safety. Chapter 3 (Affected Environment) contains descriptions of the existing environment and socioeconomic conditions in the region of influence (ROI), which includes

Table ES-3. Alternatives Analyzed in the EIS/OEIS

Operational Element	Alternatives		
	No Action Alternative	Minimum Components Alternative	Preferred Alternative
Current Operations			
Air-to-Air	Current RDT&E Levels	Current RDT&E Levels	Current RDT&E Levels
Air-to-Surface			
Surface-to-Air			
Surface-to-Surface			
Subsurface-to-Surface			
TMD Element (Per Year)			
Boost Phase	0	0	3
Upper Tier	0	0	3
Lower Tier	0	0	3
Nearshore Intercept	0	8	8
Training Element (Per Year)			
FLEETEX	2	3	3
Special Warfare	2	2	4
Facility Modernization Element			
NAS Point Mugu	None	None	New Launch Locations
San Nicolas Island	None	- 5 multi-purpose instrumentation sites	- Missile Launcher - Vertical Launcher - Range Support Building - 5 multi-purpose instrumentation sites

RDT&E = Research, Development, Test and Evaluation

the Point Mugu Sea Range, NAS Point Mugu, San Nicolas Island, San Miguel Island, Santa Rosa Island, and Santa Cruz Island (see Figure ES-1).

Rather than focusing on specific operations that may occur within a limited part of the Point Mugu Sea Range, the EIS/OEIS provides a range-wide, comprehensive evaluation of proposed, as well as current, activities conducted on the Sea Range. To perform this analysis, five major types of test scenarios that are conducted on the range have been described (see Chapter 3 of the EIS/OEIS) and evaluated (see Chapter 4 of the EIS/OEIS). The five major types of ongoing test scenarios are: 1) air-to-air operations, 2) air-to-surface operations, 3) surface-to-air operations, 4) surface-to-surface operations, and 5) subsurface-to-surface operations. These five categories encompass all of the typical range operations that are currently conducted in support of testing activities. In addition, three typical types of ongoing training activities have been described and evaluated. The three major types of ongoing training activities are: 1) Fleet training exercises, 2) small-scale amphibious warfare training, and 3) special warfare training. These ongoing activities comprise the No Action Alternative, as they would continue regardless of which alternative is selected. Analysis of the No Action Alternative provides a discussion of ongoing test and training operations so that a baseline is established to address future test and training evolutions. Chapter 4 of the EIS/OEIS therefore addresses: 1) environmental impacts of current operations, and 2) potential environmental impacts of accommodating TMD testing and training, accommodating an increase in current levels of training, and modernizing Sea Range facilities.

ES.6.2 Environmental Consequences

Chapter 4, Environmental Consequences, evaluates potential impacts on the environment that would result from implementation of the proposed action or alternatives. For each impact, a determination has been made whether it would be significant or less than significant. Per CEQ regulations, the significance of impacts must be considered in terms of context and intensity (40 C.F.R. 1508.27). Mitigation measures are identified for any impacts determined to be significant. In some cases, recommendations have been provided to identify measures that would reduce environmental effects of Navy activities or to help ensure that ongoing or proposed activities would not result in significant environmental impacts.

Since this EIS/OEIS has been prepared in compliance with NEPA and EO 12114, italics have been used to differentiate each instance in which the analysis is conducted pursuant to NEPA or in which it is conducted pursuant to EO 12114; within Chapter 4 of the EIS/OEIS, impact discussions under the purview of NEPA are presented in regular text while discussions pursuant to EO 12114 are presented in italicized text. Table ES-4 provides details on impacts and mitigation measures for the No Action Alternative (current operations), the Minimum Components Alternative, and the Preferred Alternative. No significant impacts were identified for any of the alternatives.

ES.6.3 Cumulative Impacts

The analysis of cumulative impacts considers the effects of the proposed action in combination with other past, present, and reasonably foreseeable future actions taking place in the project area, regardless of what agency or person undertakes such other actions. Table ES-5 summarizes relevant past, present, and reasonably foreseeable future actions on the Point Mugu Sea Range or in the immediate vicinity of NAS Point Mugu that were evaluated for potential cumulative effects.

The potential for cumulative impacts is minimized because most of the relevant projects considered for analysis primarily affect onshore resources, while the proposed actions addressed in the EIS/OEIS primarily affect offshore resources in the Sea Range. Consequently, due to the differing characteristics of the projects, the potential for cumulative impacts is limited. For most of the actions included in Table ES-5, specific environmental documentation addressing direct and indirect effects either has been or will be conducted separately from this EIS/OEIS. Upon examination of the potential environmental impacts of these projects in consideration of the potential for additive effects when combined with the proposed activities addressed in the EIS/OEIS, the Navy determined that no cumulative impacts would occur between the proposed action and these relevant projects.

ES.6.4 Mitigation Measures

Measures identified to reduce effects or ensure no future impacts occur are summarized in Table ES-4.

ES.6.5 Other NEPA Considerations

Possible Conflicts Between the Action and the Objectives of Federal, Regional, State and Local Plans, Policies, and Controls. The proposed action would comply with existing federal regulations and with state, regional, and local policies and programs. The proposed action would be in compliance with all applicable federal acts, executive orders, and policies.

Energy Requirements and Conservation Potential of the Proposed Action and Alternatives. Energy required to successfully implement the proposed action would include fossil fuels and electricity needed to power aircraft, missiles, targets, vehicles, vessels, and equipment. Fuels and electricity are currently

Table ES-4. Impact Summary Chart

Alternative	GEOLOGY AND SOILS		AIR QUALITY	
	NEPA (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*	**NEPA** (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*
NO ACTION ALTERNATIVE	Ten-year accumulation of target launch combustion products in soils, in mg per kg of soil (Mugu/San Nicolas Island): Al (11.3/26.0), Pb (0.2/ 0.5), Cu (0.05/0.1). These levels are substantially below federal soil quality guidelines and are less than 4% and 6% of respective background soil concentrations. Physical soil disturbance from JATO bottles falling on dry soil at Point Mugu and San Nicolas Island constitutes only 0.1 and 0.03% of the respective impact areas. Less than significant impact.	*No effects on sediment stability; changes to ocean bottom sediment quality are well below federal standards. Less than significant impact.*	No increases in current emissions; no change to baseline. Less than significant impacts.	*No increases in current emissions; no change to baseline. Less than significant impacts.*
MINIMUM COMPONENTS ALTERNATIVE (This alternative includes impacts identified for the No Action Alternative.)	Ten-year accumulation of target launch combustion products in soils, in mg/kg (Mugu/San Nicolas Island): Al (12.0/34.6), Pb (0.2/ 0.7), Cu (0.06/0.2). These levels are substantially below federal soil quality guidelines and are less than 4% and 8% of respective background soil concentrations. Physical soil disturbance from JATO bottles falling on dry soil at Point Mugu and San Nicolas Island would constitute only 0.1 and 0.04% of the respective impact areas. Less than significant impact.	*No effects on sediment stability; changes to ocean bottom sediment quality would be well below federal standards. Less than significant impact.*	Net emissions change below de minimis levels; a General Conformity Determination not required. Net emissions change would not significantly affect regional air quality; less than significant impact.	*Net emissions change would not significantly affect air quality; less than significant impact.*
PREFERRED ALTERNATIVE (This alternative includes impacts identified for the No Action Alternative.)	Ten-year accumulation of target launch combustion products in soils, in mg/kg (Mugu/San Nicolas Island): Al (12.0/47.9), Pb (0.2/ 0.9), Cu (0.06/0.2). These levels are substantially below federal soil quality guidelines and are less than 4% and 10% of respective background soil concentrations. Physical soil disturbance from JATO bottles falling on dry soil at Point Mugu and San Nicolas Island would constitute only 0.1 and 0.04% of the respective impact areas. Less than significant impact.	*No effects on sediment stability; changes to ocean bottom sediment quality would be well below federal standards. Less than significant impact.*	Net emissions change below de minimis levels; a General Conformity Determination not required. Net emissions change would not significantly affect regional air quality; less than significant impact.	*Net emissions change would not significantly affect air quality; less than significant impact.*
MITIGATION MEASURES	None.	*None.*	None.	*None.*

Table ES-4. Impact Summary Chart (continued)

Alternative	NOISE		WATER QUALITY*	
	NEPA (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*	**NEPA** (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*
NO ACTION ALTERNATIVE	No change to noise contours at the NAS Point Mugu or San Nicolas Island airfields. Less than significant impact. No change from current Sea Range airborne noise levels (63.3 L_{dnmr}). Less than significant impact.	*No change from current Sea Range airborne noise levels (63.3 L_{dnmr}). Less than significant impact.*	Mugu Lagoon: short-term concentrations for metals (0.06-2.7 µg/L), fuel (0.65-2.2 µg/L), and perchlorate (3.9-13.4 µg/L) below standards. Sea Range: PAHs (4.02-193 µg/L) below standards; battery constituents from FLEETEX activities (0.01-37.6 µg/L) exceed chronic criteria resulting in localized, short-term impacts. Other activities below standards. Less than significant impact.	*PAHs (4.02-141,000 µg/L); aircraft target activities temporarily exceed standards but would quickly dissipate to levels at or below standards. Other activities below standards. Battery constituents from FLEETEX activities (0.01-37.6 µg/L) exceed chronic criteria resulting in localized, short-term impacts; other activities below standards. Less than significant impact.*
MINIMUM COMPONENTS ALTERNATIVE (This alternative includes impacts identified for the No Action Alternative.)	No change to noise contours at the NAS Point Mugu or San Nicolas Island airfields. Less than significant impact. No change from current Sea Range airborne noise levels (63.3 L_{dnmr}). Less than significant impact.	*No change from current Sea Range airborne noise levels (63.3 L_{dnmr}). Less than significant impact.*	Mugu Lagoon: short-term concentrations for metals (0.06-2.7 µg/L), fuel (0.65-2.2 µg/L), and perchlorate (3.9-13.4 µg/L) below standards. Sea Range: PAHs (4.02-193 µg/L) below standards. Battery constituents from nearshore intercept and FLEETEX activities (7.1-37.6 µg/L) would exceed chronic criteria resulting in localized, short-term impacts. Less than significant impact.	*PAHs (4.02-141,000 µg/L); aircraft target activities would temporarily exceed standards but would quickly dissipate to levels at or below standards. Other activities below standards. Battery constituents from FLEETEX activities (37.6 µg/L) would exceed chronic criteria resulting in localized, short-term impacts. Less than significant impact.*
PREFERRED ALTERNATIVE (This alternative includes impacts identified for the No Action Alternative.)	No change to noise contours at the NAS Point Mugu or San Nicolas Island airfields. Less than significant impact. A <1 L_{dnmr} increase from current Sea Range airborne noise levels. Less than significant impact.	*A <1 L_{dnmr} increase from current Sea Range airborne noise levels. Less than significant impact.*	Mugu Lagoon: short-term concentrations for metals (0.06-2.7 µg/L), fuel (0.65-2.2 µg/L), and perchlorate (3.9-13.4 µg/L) below standards. Sea Range: PAHs (4.02-193 µg/L) below standards. Battery constituents from nearshore intercept and FLEETEX activities (7.1-37.6 µg/L) would exceed chronic criteria resulting in localized, short-term impacts. Less than significant impact.	*PAHs (4.02-141,000 µg/L); aircraft target activities would temporarily exceed standards but would quickly dissipate to levels at or below standards. Other activities below standards. Battery constituents from FLEETEX activities (37.6 µg/L) would exceed chronic criteria resulting in localized, short-term impacts. Less than significant impact.*
MITIGATION MEASURES	None.	*None.*	None.	*None.*

* Water quality concentrations of each activity are addressed independently, not collectively. NAWQC criteria are applicable only for short-term concentrations but not for loading or long-term effects. In addition, it is extremely unlikely that any two activities would affect the same volume of water, even if they occurred very close together in time.

Table ES-4. Impact Summary Chart (continued)

Alternative	*MARINE BIOLOGY*		*FISH AND SEA TURTLES*	
	NEPA (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*	**NEPA** (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*
NO ACTION ALTERNATIVE	Concentration of sediment and water quality contaminants below criteria established for protection of aquatic life with the exception of current FLEETEX activities. Hazardous constituents from FLEETEX activities slightly exceed criteria for sediment quality and may produce localized, short-term impacts. No impacts on threatened and endangered species. No long-term changes to species abundance or diversity. Less than significant impact.	*Concentration of sediment and water quality contaminants below criteria established for protection of aquatic life (excluding QF-4 and FLEETEX activities). QF-4 activities may produce localized, short-term impacts in the open ocean away from sensitive resources. Hazardous constituents from FLEETEX activities slightly exceed criteria for sediment quality and may produce localized, short-term impacts. No impacts on threatened and endangered species. No long-term changes to species abundance or diversity. No loss or degradation of sensitive species habitat from missile or target debris. Less than significant impact.*	Ship noise and noise caused by intact missiles may result in short-term behavioral changes in fish (e.g., fish may temporarily avoid the area); less than significant impact. No significant impacts on small number of sea turtles within the ROI.	*Ship noise and noise caused by intact missiles may result in short-term behavioral changes in fish (e.g., fish may temporarily avoid the area); less than significant impact. No significant impacts on small number of sea turtles within the ROI.*
MINIMUM COMPONENTS ALTERNATIVE (This alternative includes impacts identified for the No Action Alternative.)	Concentration of sediment and water quality contaminants below criteria established for protection of aquatic life, with exception of the additional FLEETEX. Hazardous constituents from the current and additional FLEETEX activities slightly exceed criteria for sediment quality and may produce localized, short-term impacts. No impacts on threatened and endangered species. No long-term changes to species abundance or diversity. Potential loss of small amount of kelp within range of natural variability. Less than significant impact.	*Concentration of sediment and water quality contaminants below criteria established for protection of aquatic life, with exception of the additional FLEETEX. Hazardous constituents from the current and additional FLEETEX activities slightly exceed criteria for sediment quality, and may produce localized, short-term impacts. No impacts on threatened and endangered species. No long-term changes to species abundance or diversity. No loss or degradation of sensitive species habitat from missile or target debris. Less than significant impact.*	Ship noise and noise caused by intact missiles may result in short-term behavioral changes in fish (e.g., fish may temporarily avoid the area); less than significant impact. No significant impacts on small number of sea turtles within the ROI. Potential loss of small numbers of fish due to immediate exposure of nearshore intercept debris. No significant impacts on fish populations or fisheries.	*Ship noise and noise caused by intact missiles may result in short-term behavioral changes in fish (e.g., fish may temporarily avoid the area); less than significant impact. No significant impacts on small number of sea turtles within the ROI.*

Table ES-4. Impact Summary Chart (continued)

Alternative	MARINE BIOLOGY (CONTINUED)		FISH AND SEA TURTLES (CONTINUED)	
	NEPA (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*	**NEPA** (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*
PREFERRED ALTERNATIVE (This alternative includes impacts identified for the No Action Alternative.)	Concentration of sediment and water quality contaminants below criteria established for protection of aquatic life, with exception of the additional FLEETEX. Hazardous constituents from the current and additional FLEETEX activities slightly exceed criteria for sediment quality, and may produce localized, short-term impacts. No impacts on threatened and endangered species. No long-term changes to species abundance or diversity. Potential loss of small amount of kelp within range of natural variability. Less than significant impact.	*Concentration of sediment and water quality contaminants below criteria established for protection of aquatic life, with exception of the additional FLEETEX. Hazardous constituents from the current and additional FLEETEX activities slightly exceed criteria for sediment quality, and may produce localized, short-term impacts. No impacts on threatened and endangered species. No long-term changes to species abundance or diversity. No loss or degradation of sensitive species habitat from missile or target debris. Less than significant impact.*	Ship noise and noise caused by intact missiles may result in short-term behavioral changes in fish (e.g., fish may temporarily avoid the area); less than significant impact. No significant impacts on small number of sea turtles within the ROI. Potential loss of small numbers of fish due to immediate exposure of nearshore intercept debris. No significant impacts on fish populations or fisheries.	*Ship noise and noise caused by intact missiles may result in short-term behavioral changes in fish (e.g., fish may temporarily avoid the area); less than significant impact. No significant impacts on small number of sea turtles within the ROI.*
MITIGATION MEASURES	None.	*None.*	None.	*None.*

Table ES-4. Impact Summary Chart (continued)

MARINE MAMMALS

Alternative	**NEPA** (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*
NO ACTION ALTERNATIVE	There is a low probability in any one year that any marine mammal is injured or killed by intact missile impacts or shock waves (0.0004), inert mine drops (0.0005), or falling debris from intercepts (0.0007) in Territorial Waters (Table 4.7-3). The probability that a threatened or endangered species is hit approaches zero. Impacts are less than significant. Small numbers of marine mammals (2.0 per year) experience TTS with no biological consequences in Territorial Waters (Table 4.7-3). The likelihood of any individual animal experiencing TTS more than once per year approaches zero. Impacts are less than significant. Pinnipeds on San Nicolas Island show little reaction to most transient sounds. However, recent Navy monitoring efforts revealed that pinnipeds stampeded during two separate Vandal launch events. Pinniped populations near the launch sites and around the entire island are expanding. Pinnipeds at Point Mugu are not exposed to sound levels that could cause disturbance. Population level impacts are less than significant.	*There is a low probability in any one year that any marine mammal is injured or killed by intact missile impacts or shock waves (0.0009), or falling debris from intercepts (0.001) in non-Territorial Waters (Table 4.7-3). The probability that a threatened or endangered species is hit approaches zero. Impacts are less than significant.* *Small numbers of marine mammals (2.1 per year) experience TTS (Table 4.7-3) with no biological consequences in non-Territorial Waters. The likelihood of any individual animal experiencing TTS more than once per year approaches zero. Impacts are less than significant.*
MINIMUM COMPONENTS ALTERNATIVE (This alternative includes impacts identified for the No Action Alternative.)	Increased debris would have a negligible effect on the overall probability of a marine mammal being injured or killed by intact missiles and falling debris hitting the water (Table 4.7-5). Small numbers of marine mammals (5.2 per year) may experience short-term TTS with no biological consequences (Table 4.7-5). Impacts would be less than significant. Pinnipeds on San Nicolas Island would show little reaction to nearshore intercepts. San Nicolas Island construction would not affect pinniped haul-out sites. Otherwise same as for No Action Alternative. Population-level impacts would be less than significant.	*Increased debris would have a negligible effect on the overall probability of a marine mammal being injured or killed by intact missiles and falling debris hitting the water (Table 4.7-5).* *Small numbers of marine mammals (2.3 per year) may experience short-term TTS with no biological consequences (Table 4.7-5). Impacts would be less than significant.*
PREFERRED ALTERNATIVE (This alternative includes impacts identified for the No Action Alternative.)	Increased debris would have a negligible effect on the overall probability of a marine mammal being injured or killed by intact missiles and falling debris hitting the water (Table 4.7-6). Small numbers of marine mammals (5.2) per year may experience short-term TTS with no biological consequences (Table 4.7-6). Impacts would be less than significant. Some of the pinnipeds on western San Nicolas Island may react to some additional launches. Population-level impacts would be less than significant. Use of the beach launch pads at NAS Point Mugu and construction at San Nicolas Island would not affect pinniped haul-out sites. Additional launches from San Nicolas Island would have no long-term impacts. Received sound levels at the Mugu Lagoon haul-out site would remain below the disturbance threshold. Impacts would be less than significant.	*Increased debris would have a negligible effect on the overall probability of a marine mammal being injured or killed by intact missiles and falling debris hitting the water (Table 4.7-6).* *Small numbers of marine mammals (2.9) per year may experience short-term TTS with no biological consequences (Table 4.7-6). Impacts would be less than significant.*

Table ES-4. Impact Summary Chart (continued)

MARINE MAMMALS (CONTINUED)

Alternative	**NEPA** (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*
MITIGATION MEASURES	Recent monitoring efforts at San Nicolas Island revealed that pinnipeds stampeded during two separate Vandal launch events. In response to these recent observations, the Navy is applying for Incidental Harassment Authorization (IHA) from NMFS. A description of the activities proposed to be covered under the IHA and a summary of the associated monitoring program will be presented in the Final EIS/OEIS.	*None.*

Table ES-4. Impact Summary Chart (continued)

TERRESTRIAL BIOLOGY

Alternative	**NEPA** (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*
NO ACTION ALTERNATIVE	The potential for bird strikes by aircraft, missiles, targets, and debris is low and precludes biologically significant impacts on bird populations. Increases in ambient noise levels from routine aircraft takeoffs and landings and missile and target launches from NAS Point Mugu sometimes result in temporary interruption of foraging, resting, or flying behaviors with no biologically significant impacts on bird populations. Potential for adverse impacts to breeding cormorant colonies on San Nicolas Island due to human disturbance and gull predation resulting from launch activities (i.e., cormorants may leave their nests). Monitoring program ensures impacts remain less than significant. Potential impacts on sensitive species from direct hits from JATO bottles at both NAS Point Mugu and San Nicolas Island are less than significant given the very low probability of a strike, when considered on either an individual or yearly basis (Table 4.8-2). Potential impacts on sensitive species habitat from JATO bottles accumulating in Mugu Lagoon or on San Nicolas Island are less than significant given implementation of the JATO bottle recovery program, now in effect at NAS Point Mugu and in development at San Nicolas Island. Potential for adverse impact to snowy plovers nesting near the Building 807 Launch Complex on San Nicolas Island from human and vehicle traffic associated with launch operations. Mitigation measures being developed in coordination with the USFWS ensure no significant impact.	*Potential impacts limited to debris effects on seabirds. Seabird density is low in affected areas and the potential for direct impacts is remote. Less than significant impact.*
MINIMUM COMPONENTS ALTERNATIVE (This alternative includes impacts identified for the No Action Alternative.)	Short-term increase in noise similar to current operations. Construction sites on San Nicolas Island would avoid sensitive habitat. Less than significant impact. An increase in operations would increase the potential for bird strikes from aircraft, missiles, targets, and debris but potential for strikes still low enough to preclude biologically significant impacts on bird populations. Small increase in JATO bottle use from the additional FLEETEX would have a negligible effect on the overall probability of a sensitive species being hit by a JATO bottle (Table 4.8-2); impacts would be less than significant.	*Potential impacts limited to debris effects on seabirds. Seabird density is low in affected areas and the potential for direct impacts is remote. Less than significant impact.*

Table ES-4. Impact Summary Chart (continued)

TERRESTRIAL BIOLOGY (CONTINUED)

Alternative	**NEPA** (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*
PREFERRED ALTERNATIVE (This alternative includes impacts identified for the No Action Alternative.)	Short-term increase in noise similar to current operations. Construction sites on San Nicolas Island would avoid sensitive habitat. Less than significant impact. An increase in operations would increase the potential for bird strikes from aircraft, missiles, targets, and debris but potential for strikes still low enough to preclude biologically significant impacts on bird populations. Small increase in JATO bottle use from the additional FLEETEX would have a negligible effect on the overall probability of a sensitive species being hit by a JATO bottle (Table 4.8-2); impacts would be less than significant. Potential for adverse impacts to nesting snowy plovers from disturbance due to missile launches from Pad B and Pad C at NAS Point Mugu resulting in increased noise and human activity. Mitigation measures being developed in coordination with the USFWS ensure no significant impacts.	*Potential impacts limited to debris effects on seabirds. Seabird density is low in affected areas and the potential for direct impacts is remote. Less than significant impact.*
MITIGATION MEASURES	Monitor existing cormorant colonies on San Nicolas Island to determine reaction to launches. Develop mitigation measures if an adverse reaction is observed. Monitor Building 807 Launch Complex area during snowy plover breeding season to determine usage and nest locations. Place physical barriers around active nests. Further methods to offset disturbance are currently being developed in consultation with the USFWS. Conduct regular surveys and monitor snowy plover nesting sites within the Pad B and Pad C launch areas at NAS Point Mugu. Protect active nests by placement of barricades and signs. Further methods to be identified in coordination with the USFWS.	*None.*

Table ES-4. Impact Summary Chart (continued)

Alternative	CULTURAL RESOURCES		LAND USE	
	NEPA (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*	**NEPA** (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*
NO ACTION ALTERNATIVE	Potentially significant but mitigable impact on submerged cultural resources in Becher's Bay.	*Few cultural resources offshore. No significant impacts on submerged resources.*	No change to existing land use. Less than significant impact.	*No change to existing land use. Less than significant impact.*
MINIMUM COMPONENTS ALTERNATIVE (This alternative includes impacts identified for the No Action Alternative.)	Potential for significant but mitigable impacts on subsurface archaeological deposits during construction on San Nicolas Island.	*Few cultural resources offshore. No significant impacts on submerged resources.*	Closure of San Nicolas Island to peak commercial fishing 2-4 days per year. Less than significant impact.	*No substantial changes to current or planned land use. Less than significant impact.*
PREFERRED ALTERNATIVE (This alternative includes impacts identified for the No Action Alternative.)	Potential for significant but mitigable impacts on subsurface archaeological deposits during construction on San Nicolas Island.	*Few cultural resources offshore. No significant impacts on submerged resources.*	Closure of San Nicolas Island to peak commercial fishing 2-4 days per year. Less than significant impact.	*No substantial changes to current or planned land use. Less than significant impact.*
MITIGATION MEASURES	If inert mine drops or cleanup activities occur nearshore of the hazard area and expose cultural resources, initiate data recovery measures in accordance with Section 106. Resulting impacts would be less than significant. Implement construction requirement to halt work upon discovery of resource and initiate Section 106 consultation. Resulting impacts would be less than significant.	*None.*	None.	*None.*

Table ES-4. Impact Summary Chart (continued)

Alternative	TRAFFIC: NEPA (On Land→ Territorial Waters)	TRAFFIC: EO 12114 (Non-Territorial Waters)	SOCIOECONOMICS: NEPA (On Land→ Territorial Waters)	SOCIOECONOMICS: EO 12114 (Non-Territorial Waters)
NO ACTION ALTERNATIVE	No increase in vehicular traffic. Established flight procedures and no change to airspace use. Advance notice system and low levels of marine traffic in affected areas. Less than significant impact.	*Established flight procedures and no change to airspace use. Advance notice system and low levels of marine traffic in affected areas. Less than significant impact.*	Current range operations do not adversely affect commercial shipping and fishing, sport fishing, or tourist-related economic activities. Less than significant impact.	*Current range operations do not adversely affect commercial shipping and fishing, sport fishing, or tourist-related economic activities. Less than significant impact.*
MINIMUM COMPONENTS ALTERNATIVE (This alternative includes impacts identified for the No Action Alternative.)	No increase in vehicular traffic. Aircraft sorties increase by less than 1%. Less than 4% increase in total vessel activity for TMD testing and training. Short duration (2-3 days) of additional training. Less than significant impact.	*Aircraft sorties increase by less than 1%. Less than 4% increase in total vessel activity for TMD testing and training. Short duration (2-3 days) of additional training. Less than significant impact.*	Short-term, adverse effects on individual commercial fishermen during peak periods (about $150,000 maximum total potential revenue loss on a peak day); since some lost revenue could be recaptured for the 2-4 closures/year during peak periods, regional earnings would not be significantly affected and impact would be less than significant. Minority or low income populations would not be disproportionately affected. Children would not be exposed to increased noise levels or disproportionately exposed to safety risks.	*Temporary range clearance procedures would not affect economic activities in offshore waters. Less than significant impact.*
PREFERRED ALTERNATIVE (This alternative includes impacts identified for the No Action Alternative.)	Short-term construction traffic on San Nicolas Island. Less than 2% increase in aircraft activity for TMD testing and training. Short duration of additional training (7 days maximum). Established air and marine traffic procedures. Less than significant impact.	*Less than 2% increase in aircraft activity for TMD testing and training. Short duration of additional training (2-3 days). Established air and marine traffic procedures. Less than significant impact.*	Short-term, adverse effects on individual commercial fishermen during peak periods (about $150,000 maximum total potential revenue loss on a peak day); since some lost revenue could be recaptured for the 2-4 closures/year during peak periods, regional earnings would not be significantly affected and impact would be less than significant. Minority or low income populations would not be disproportionately affected. Children would not be exposed to increased noise levels or disproportionately exposed to safety risks.	*Temporary range clearance procedures would not affect economic activities in offshore waters. Less than significant impact.*
MITIGATION MEASURES	None.	*None.*	None.	*None.*

Table ES-4. Impact Summary Chart (continued)

Alternative	HAZARDOUS MATERIALS		PUBLIC SAFETY	
	NEPA (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*	**NEPA** (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*
NO ACTION ALTERNATIVE	Military munitions are not considered hazardous wastes when they are used for their intended purpose, including training of military personnel and research and development activities. This includes virtually all of the use of guided missiles, ballistic missiles, rockets, and missile targets at the Point Mugu Sea Range. A review of the use of munitions and targets on the Sea Range was conducted and their hazardous constituents disposition was analyzed; these results are used in the analyses of other resource areas to determine the potential for significant impacts. The components that contain hazardous constituents include propellants, batteries, flares, telemetry, igniters, jet fuel, diesel fuel, hydraulic fluid, and explosive warheads. A total of 964.82 pounds (437.64 kg) per year of hazardous constituents were deposited within Territorial Waters of the Sea Range in the baseline year. There would be no increase in the generation, transport, or storage of hazardous waste and therefore no impacts on hazardous waste management at NAS Point Mugu or San Nicolas Island. Less than significant impact.	*Military munitions are not considered hazardous wastes when they are used for their intended purpose, including training of military personnel and research and development activities. This includes virtually all of the use of guided missiles, ballistic missiles, rockets, and missile targets at the Point Mugu Sea Range. A review of the use of munitions and targets on the Sea Range was conducted and their hazardous constituents disposition was analyzed; these results are used in the analyses of other resource areas to determine the potential for significant impacts. The components that contain hazardous constituents include propellants, batteries, flares, telemetry, igniters, jet fuel, diesel fuel, hydraulic fluid, and explosive warheads. A total of 12,105.04 pounds (5,490.81 kg) per year of hazardous constituents were deposited within non-Territorial Waters of the Sea Range in the baseline year.*	Range clearance procedures implemented before each event; EMR below safety thresholds for personnel. Less than significant impacts.	*Range clearance procedures implemented before each event. Less than significant impacts.*
MINIMUM COMPONENTS ALTERNATIVE (This alternative includes impacts identified for the No Action Alternative.)	A total of 2,869.99 pounds (1,301.82 kg) per year of hazardous constituents would be deposited within Territorial Waters of the Sea Range (an increase of 1,905.17 pounds [864.18 kg] over current operations). The small increase in range operations would not significantly affect hazardous waste management at NAS Point Mugu or San Nicolas Island. Less than significant impact.	*A total of 12,804.82 pounds (5,808.23 kg) per year of hazardous constituents would be deposited within non-Territorial Waters of the Sea Range (an increase of 699.78 pounds [317.42 kg] over current operations).*	Range clearance procedures implemented before each event. Less than significant impacts.	*Range clearance procedures implemented before each event. Less than significant impacts.*

Table ES-4. Impact Summary Chart (continued)

Alternative	HAZARDOUS MATERIALS (CONTINUED)		PUBLIC SAFETY (CONTINUED)	
	NEPA (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*	**NEPA** (On Land→ Territorial Waters)	***EO 12114*** *(Non-Territorial Waters)*
PREFERRED ALTERNATIVE (This alternative includes impacts identified for the No Action Alternative.)	A total of 2,988.95 pounds (1,355.78 kg) per year of hazardous constituents would be deposited within Territorial Waters of the Sea Range (an increase of 2,024.13 pounds [918.14 kg] over current operations). The small increase in range operations would not significantly affect hazardous waste management at NAS Point Mugu or San Nicolas Island. Less than significant impact.	*A total of 13,269.75 pounds (6,019.12 kg) per year of hazardous constituents would be deposited within non-Territorial Waters of the Sea Range (an increase of 1,164,71 pounds [528.31 kg] over current operations).*	For upper tier events, the Navy would increase range safety and clearance resources and increase coordination efforts with the FAA and Coast Guard. Less than significant impacts.	*For upper tier events, the Navy would increase range safety and clearance resources and increase coordination efforts with the FAA and Coast Guard. Less than significant impacts.*
MITIGATION MEASURES	None.	*None.*	None.	*None.*

Table ES-5. Projects and Actions on the Point Mugu Sea Range or in the Immediate Vicinity of NAS Point Mugu that were Evaluated for Cumulative Impacts

Action	Description
VR-55 and MMF Relocation	Relocation of five C-130 aircraft, 66 maintenance vans, and associated personnel from Moffet Field, California, to NAS Point Mugu
Surface Warfare Engineering Facility	Radio frequency emitters located at the Construction Battalion Center in Port Hueneme; operated by a separate Navy Command
West Coast Basing of the F/A-18E/F Aircraft	Once considered a potential receiving installation for F/A-18 aircraft and associated personnel, NAS Point Mugu was eliminated as a candidate
San Clemente Island Range Complex	Ongoing operations at Navy-owned San Clemente Island and associated range and operational areas
Tomahawk Testing and Training	A proposal to use an existing underwater launch site near San Clemente Island and establish and use a new missile recovery area on San Nicolas Island
Inert Ordnance Delivery Location at San Nicolas Island	A proposal to establish an inert ordnance delivery area on San Nicolas Island
Pier Construction at San Nicolas Island	A proposal to establish a new supply pier on San Nicolas Island
E-2C Aircraft Parking Apron Extension	A proposal to extend an existing aircraft parking apron at NAS Point Mugu.
Range Operations Center Addition	A proposal to construct a two-story addition to the existing Range Operations Center at NAS Point Mugu.
Vandenberg Air Force Base Ongoing Operations	Operations include launching and tracking satellites in space and testing and evaluating strategic intercontinental ballistic missile systems
Evolved Expendable Launch Vehicle Program	Development and deployment of Evolved Expendable Launch Vehicle systems at Vandenberg Air Force Base
F-22 Low-Level Supersonic Over-Water Testing	Operations include conducting 24 low-level supersonic sorties per year over open ocean areas within the Point Mugu Sea Range
California State University Channel Islands Campus	Reuse of the former California State Development Hospital facilities in Camarillo as a new university campus in Ventura County
Construction Projects within the Region of Influence	Various construction projects proposed in Ventura County and at NAS Point Mugu
Hyper-X Research Vehicle Program	Preflight preparation and test flight activities that include use of the Point Mugu Sea Range
Shipping Channel Relocation	A proposal to relocate the Southern California Shipping Channel 25 miles south of its current location
Channel Islands National Marine Sanctuary	The management plan for the sanctuary is currently being revised
Marine Vessel Noise	Marine vessel noise from Navy, commercial, and private vessel traffic in the Sea Range

available and are in adequate supply. Proposed new construction would comply with local and state codes which are designed to promote energy efficiency, water conservation, and the use of renewable energy sources. No additional conservation measures related to direct energy consumption by the proposed action are identified.

Irreversible or Irretrievable Commitment of Resources. The proposed action would constitute an irreversible or irretrievable commitment of nonrenewable or depletable resources for the materials and energy expended during implementation of the TMD, training, and facility modernization elements. Implementation of the proposed action would not result in the destruction of environmental resources such that the range of potential uses of the environment would be limited.

Relationship Between Short-Term Environmental Impacts and Long-Term Productivity. Implementation of the proposed action would result in increased air emissions, increased noise, increased air and vessel traffic, and increased deposition of weapons testing debris into the Sea Range. These impacts would be

positively offset by the long-term productivity of NAWCWPNS Point Mugu and the long-term goal of allowing the Navy to successfully meet future defense requirements.

Unavoidable Adverse Effects. CEQ regulations (40 C.F.R. § 1502.16) require a discussion of any adverse environmental effects that cannot be avoided. All potentially adverse impacts of the proposed action would be mitigable to a less than significant level by the implementation of mitigation measures recommended in this document (refer to Table ES-4).